In the Claims:

Please amend claims 1-11, 13 and 14 as follows:

1. (Currently Amended) A method of training for a recording medium reproduction equalizer, comprising, in a training operation for optimizing a multiplication coefficient for each tap of an FIR equalizer equalizing a read signal read from a recording medium, the steps of:

a) utilizing, as a restricted coefficient updating vector applied for updating the multiplication coefficient for each tap of ~~the~~an FIR filter, a vector obtained from projecting, onto a plane perpendicular to a predetermined restricting conditioning vector, a coefficient updating vector determined based on an equalizer error between the output of the FIR equalizer and a reproduction output determined therefrom, and a delayed input value for each tap of the FIR equalizer; and

b) utilizing, as the predetermined restricting ~~conditional~~conditioning vector, a coefficient vector comprising the multiplication coefficients for the equalizer obtained upon calculating the equalizer error.

2. (Currently Amended) A method of training for a recording medium reproduction equalizer, comprising, in a training operation for optimizing a multiplication coefficient for each tap of an FIR equalizer equalizing a read signal read from a recording medium, the steps of:

a) utilizing, as a restricted coefficient updating vector applied for updating the multiplication coefficient for each tap of ~~the~~an FIR filter, a vector obtained by projecting, onto a plane perpendicular to a predetermined restricting ~~conditional~~conditioning vector, a coefficient updating vector determined based on an equalizer error between the output of the FIR equalizer and a reproduction output determined therefrom, and a delayed input value for each tap of the FIR equalizer; and

b) utilizing, as the predetermined restricting ~~conditional~~conditioning vector, a vector which is a difference between a coefficient vector comprising the multiplication coefficients for the FIR equalizer obtained upon calculating the equalizer error and another coefficient vector immediately subsequent thereto obtained in ~~the~~a same condition.

3. (Currently Amended) A method of training for a recording medium reproduction equalizer, comprising, in a training operation for optimizing a multiplication coefficient for each tap of an FIR equalizer equalizing a read signal read from a recording medium, the steps of:

a) utilizing, as a restricted coefficient updating vector applied for updating the multiplication coefficient for each tap of ~~the~~an FIR filter, a vector obtained by projecting, onto a plane perpendicular to a predetermined restricting ~~conditional~~conditioning vector, a coefficient updating vector determined based on an equalizer error between ~~the~~an output of the FIR equalizer and a reproduction output determined therefrom and a delayed input value for each tap of the FIR equalizer; and

b) utilizing, as the predetermined restricting ~~conditional~~conditioning vector, a vector which is a difference between a subsequent coefficient vector obtained in the same condition immediately subsequent to and an antecedent coefficient vector obtained in the same condition immediately antecedent to a reference coefficient comprising the multiplication coefficients for the FIR equalizer obtained upon calculating the equalizer error.

4. (Currently Amended) A recording medium reproduction apparatus comprising:

training part training for a recording medium reproduction equalizer,

wherein:

in a training operation for optimizing a multiplication coefficient for each tap of an FIR equalizer equalizing a read signal read from a recording medium, said training part utilizes, as a restricted coefficient updating vector applied for updating the multiplication coefficient for each tap of ~~the~~an FIR filter, a vector obtained by projecting, onto a plane perpendicular to a predetermined restricting ~~conditional~~conditioning vector, a coefficient updating vector determined based on an equalizer error between the output of the FIR equalizer and a reproduction output determined therefrom and a delayed input value for each tap of the FIR equalizer; and

said training part utilizes, as the predetermined restricting ~~conditional~~conditioning vector, a coefficient vector comprising the multiplication

coefficients for the FIR equalizer obtained upon calculating the equalizer error.

5. (Currently Amended) A recording medium reproduction apparatus comprising:

training part training for a recording medium reproduction equalizer,

wherein:

in a training operation for optimizing a multiplication coefficient for each tap of an FIR equalizer equalizing a read signal read from a recording medium, said training part utilizes, as a restricted coefficient updating vector applied for updating the multiplication coefficient for each tap of ~~the~~an FIR filter, a vector obtained by projecting, onto a plane perpendicular to a predetermined restricting ~~conditional~~conditioning vector, a coefficient updating vector determined based on an equalizer error between the output of the FIR equalizer and a reproduction output determined therefrom and a delayed input value for each tap of the FIR equalizer; and

said training part utilizes, as the predetermined restricting ~~conditional~~conditioning vector, a vector which is a difference between a coefficient vector comprising the multiplication coefficients for the FIR equalizer obtained upon calculating the equalizer error and another coefficient vector immediately subsequent thereto obtained in the same condition.

6. (Currently Amended) A recording medium reproduction apparatus comprising:

training part training for a recording medium reproduction equalizer,

wherein:

in a training operation for optimizing a multiplication coefficient for each tap of an FIR equalizer equalizing a read signal read from a recording medium, said training part utilizes, as a restricted coefficient updating vector applied for updating the multiplication coefficient for each tap of ~~the~~an FIR filter, a vector obtained by projecting, onto a plane perpendicular to a predetermined restricting ~~conditional~~conditioning vector, a coefficient updating vector determined based on an equalizer error between the output of the FIR equalizer and a reproduction output determined therefrom and a delayed input value for each tap of the FIR equalizer; and

said training part utilizes, as the restricting ~~conditional~~conditioning vector, a vector which is a difference between a subsequent coefficient vector obtained in the same condition immediately subsequent to and an antecedent coefficient vector obtained in the same condition immediately antecedent to a reference coefficient comprising the multiplication coefficients for the FIR equalizer obtained upon calculating the equalizer error.

7. (Currently Amended) The method as claimed in claim 2, wherein:

said coefficient vector immediately subsequent comprises the multiplication

coefficients shifted toward ~~the~~a higher order side by one order with respect to those of ~~the~~a current coefficient vector and a predetermined number inserted as ~~the~~a lowest order coefficient.

8. (Currently Amended) The method as claimed in ~~claim 8~~claim 7, wherein:

said predetermined number comprises zero.

9. (Currently Amended) The method as claimed in claim 3, wherein:

said coefficient vector immediately subsequent comprises the multiplication coefficients shifted toward ~~the~~a higher order side by one order with respect to those of the reference coefficient vector and a first predetermined number inserted as ~~the~~a lowest order coefficient; and

said coefficient vector immediately antecedent comprises the multiplication coefficients shifted toward ~~the~~a lower order side by one order with respect to those of the reference coefficient vector and a second predetermined number inserted as the highest order coefficient.

10. (Currently Amended) The method as claimed in ~~claim 8~~claim 9, wherein:

said ~~fir~~first predetermined number comprises zero, and said second predetermined number also comprises zero.

11. (Currently Amended) The apparatus as claimed in claim 5, wherein:

said coefficient vector immediately subsequent comprises the multiplication coefficients shifted toward ~~the~~a higher order side by one order with respect to those of the current coefficient vector and a predetermined number inserted as ~~the~~a lowest order coefficient.

12. (Original) The apparatus as claimed in claim 11, wherein:

said predetermined number comprises zero.

13. (Currently Amended) The apparatus as claimed in claim 6, wherein:

said coefficient vector immediately subsequent comprises the multiplication coefficients shifted toward ~~the~~a higher order side by one order with respect to those of the reference coefficient vector and a first predetermined number inserted as ~~the~~a lowest order coefficient; and

said coefficient vector immediately antecedent comprises the multiplication coefficients shifted toward the lower order side by one order with respect to those of the reference coefficient vector and a second predetermined number inserted as ~~the~~a highest order coefficient.

14. (Currently Amended) The apparatus as claimed in claim 13, wherein:

said ~~fir~~first predetermined number comprises zero, and said second

predetermined number also comprises zero.